

10/586229

AP20 Rec'd PCT/PTO 19 JUL 2006

SEQUENCE LISTING

<110> VOLLMERS, Heinz Peter  
MUELLER-HERMELINK, Hans Konrad  
HENSEL, Frank

<120> Neoplasm-Specific Polypeptides and Their  
Uses

<130> 50274/021003

<150> PCT/US05/02480

<151> 2005-01-26

<150> US 10/764,730

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 <213> Homo sapiens

<400> 6

Asp	Val	Arg	Glu	Pro	Glu	Asn	Glu	Ile	Ser	Ser	Asp	Cys	Asn	His	Leu
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Leu	Trp	Asn	Tyr	Lys	Leu	Asn	Leu	Thr	Thr	Asp	Pro	Lys	Phe	Glu	Ser
			20					25					30		
Val	Ala	Arg	Glu	Val	Cys	Lys	Ser	Thr	Ile	Thr	Glu	Ile	Glu	Glu	Cys
		35					40					45			
Ala	Asp	Glu	Pro	Val	Gly	Lys	Gly	Tyr	Met	Val	Ser	Cys	Leu	Val	Asp
	50					55					60				
His	Arg	Gly	Asn	Ile	Thr	Glu	Tyr	Gln	Cys	His	Gln	Tyr	Ile	Thr	Lys
65					70					75					80
Met	Thr	Ala	Ile	Ile	Phe	Ser	Asp	Tyr	Arg	Leu	Ile	Cys	Gly	Phe	Met
				85					90					95	
Asp	Asp	Cys	Lys	Asn	Asp	Ile	Asn	Ile	Leu	Lys	Cys	Gly	Ser	Ile	Arg
			100					105					110		
Leu	Gly	Glu	Lys	Asp	Ala	His	Ser	Gln	Gly	Glu	Val	Val	Ser	Cys	Leu
		115					120					125			
Glu	Lys	Gly	Leu	Val	Lys	Glu	Ala	Glu	Glu	Arg	Glu	Pro	Lys	Ile	Gln
	130					135					140				
Val	Ser	Glu	Leu	Cys	Lys	Lys	Ala	Ile	Leu	Arg	Val	Ala	Glu	Leu	Ser
145					150					155					160
Ser	Asp	Asp	Phe	His	Leu	Asp	Arg	His	Leu	Tyr	Phe	Ala	Cys	Arg	Asp
				165					170					175	
Asp	Arg	Glu	Arg	Phe	Cys	Glu	Asn	Thr	Gln	Ala	Gly	Glu	Gly	Arg	Val
			180					185					190		
Tyr	Lys	Cys	Leu	Phe	Asn	His	Lys	Phe	Glu	Glu	Ser	Met	Ser	Glu	Lys
		195					200					205			
Cys	Arg	Glu	Ala	Leu	Thr	Thr	Arg	Gln	Lys	Leu	Ile	Ala	Gln	Asp	Tyr
	210					215					220				
Lys	Val	Ser	Tyr	Ser	Leu	Ala	Lys	Ser	Cys	Lys	Ser	Asp	Leu	Lys	Lys
225					230					235					240
Tyr	Arg	Cys	Asn	Val	Glu	Asn	Leu	Pro	Arg	Ser	Arg	Glu	Ala	Arg	Leu
			245						250					255	
Ser	Tyr	Leu	Leu	Met	Cys	Leu	Glu	Ser	Ala	Val	His	Arg	Gly	Arg	Gln
			260					265					270		
Val	Ser	Ser	Glu	Cys	Gln	Gly	Glu	Met	Leu	Asp	Tyr	Arg	Arg	Met	Leu
		275					280					285			
Met	Glu	Asp	Phe	Ser	Leu	Ser	Pro	Glu	Ile	Ile	Leu	Ser	Cys	Arg	Gly
	290					295					300				
Glu	Ile	Glu	His	His	Cys	Ser	Gly	Leu	His	Arg	Lys	Gly	Arg	Thr	Leu



305					310					315				320
His	Cys	Leu	Met	Lys	Val	Val	Arg	Gly	Glu	Lys	Gly	Asn	Leu	Gly Met
				325					330					335
Asn	Cys	Gln	Gln	Ala	Leu	Gln	Thr	Leu	Ile	Gln	Glu	Thr	Asp	Pro Gly
				340					345					350
Ala	Asp	Tyr	Arg	Ile	Asp	Arg	Ala	Leu	Asn	Glu	Ala	Cys	Glu	Ser Val
														365
Ile	Gln	Thr	Ala	Cys	Lys	His	Ile	Arg	Ser	Gly	Asp	Pro	Met	Ile Leu
														380
Ser	Cys	Leu	Met	Glu	His	Leu	Tyr	Thr	Glu	Lys	Met	Val	Glu	Asp Cys
385														400
Glu	His	Arg	Leu	Leu	Glu	Leu	Gln	Tyr	Phe	Ile	Ser	Arg	Asp	Trp Lys
														415
Leu	Asp	Pro	Val	Leu	Tyr	Arg	Lys	Cys	Gln	Gly	Asp	Ala	Ser	Arg Leu
														430
Cys	His	Thr	His	Gly	Trp	Asn	Glu	Thr	Ser	Glu	Phe	Met	Pro	Gln Gly
														445
Ala	Val	Phe	Ser	Cys	Leu	Tyr	Arg	His	Ala	Tyr	Arg	Thr	Glu	Glu Gln
														460
Gly	Arg	Arg	Leu	Ser	Arg	Glu	Cys	Arg	Ala	Glu	Val	Gln	Arg	Ile Leu
465														480
His	Gln	Arg	Ala	Met	Asp	Val	Lys	Leu	Asp	Pro	Ala	Leu	Gln	Asp Lys
														495
Cys	Leu	Ile	Asp	Leu	Gly	Lys	Trp	Cys	Ser	Glu	Lys	Thr	Glu	Thr Gly
														510
Gln	Lys	Leu	Glu	Cys	Leu	Gln	Asp	His	Leu	Asp	Asp	Leu	Val	Val Glu
														525
Cys	Arg	Asp	Ile	Val	Gly	Asn	Leu	Thr	Glu	Leu	Glu	Ser	Glu	Asp Ile
														540
Gln	Ile	Glu	Ala	Leu	Leu	Met	Arg	Ala	Cys	Glu	Pro	Ile	Ile	Gln Asn
545														560
Phe	Cys	His	Asp	Val	Ala	Asp	Asn	Gln	Ile	Asp	Ser	Gly	Asp	Leu Met
														575
Glu	Cys	Leu	Ile	Gln	Asn	Lys	His	Gln	Lys	Asp	Met	Asn	Glu	Lys Cys
														590
Ala	Ile	Gly	Val	Thr	His	Phe	Gln	Leu	Val	Gln	Met	Lys	Asp	Phe Arg
														605
Phe	Ser	Tyr	Lys	Phe	Lys	Met	Ala	Cys	Lys	Glu	Asp	Val	Leu	Lys Leu
														620
Cys	Pro	Asn	Ile	Lys	Lys	Lys	Val	Asp	Val	Val	Ile	Cys	Leu	Ser Thr
625														640
Thr	Val	Arg	Asn	Asp	Thr	Leu	Gln	Glu	Ala	Lys	Glu	His	Arg	Val Ser
														655
Leu	Lys	Cys	Arg	Arg	Gln	Leu	Arg	Val	Glu	Glu	Leu	Glu	Met	Thr Glu
														670
Asp	Ile	Arg	Leu	Glu	Pro	Asp	Leu	Tyr	Glu	Ala	Cys	Lys	Ser	Asp Ile
														685
Lys	Asn	Phe	Cys	Ser	Ala	Val	Gln	Tyr	Gly	Asn	Ala	Gln	Ile	Ile Glu
														700
Cys	Leu	Lys	Glu	Asn	Lys	Lys	Gln	Leu	Ser	Thr	Arg	Cys	His	Gln Lys
705														720
Val	Phe	Lys	Leu	Gln	Glu	Thr	Glu	Met	Met	Asp	Pro	Glu	Leu	Asp Tyr
														735
Thr	Leu	Met	Arg	Val	Cys	Lys	Gln	Met	Ile	Lys	Lys	Phe	Cys	Pro Glu
														750
Ala	Asp	Ser	Lys	Thr	Met	Leu	Gln	Cys	Leu	Lys	Gln	Asn	Lys	Asn Ser
														765



		115				120			125							
Thr	Trp	Ser	Asn	Asn	Leu	Ala	Val	Leu	Glu	Cys	Leu	Gln	Asp	Val	Arg	
	130					135					140					
Glu	Pro	Glu	Asn	Glu	Ile	Ser	Ser	Asp	Cys	Asn	His	Leu	Leu	Trp	Asn	
145					150					155					160	
Tyr	Lys	Leu	Asn	Leu	Thr	Thr	Asp	Pro	Lys	Phe	Glu	Ser	Val	Ala	Arg	
			165						170					175		
Glu	Val	Cys	Lys	Ser	Thr	Ile	Thr	Glu	Ile	Lys	Glu	Cys	Ala	Asp	Glu	
			180					185					190			
Pro	Val	Gly	Lys	Gly	Tyr	Met	Val	Ser	Cys	Leu	Val	Asp	His	Arg	Gly	
	195						200					205				
Asn	Ile	Thr	Glu	Tyr	Gln	Cys	His	Gln	Tyr	Ile	Thr	Lys	Met	Thr	Ala	
	210					215					220					
Ile	Ile	Phe	Ser	Asp	Tyr	Arg	Leu	Ile	Cys	Gly	Phe	Met	Asp	Asp	Cys	
225				230						235					240	
Lys	Asn	Asp	Ile	Asn	Ile	Leu	Lys	Cys	Gly	Ser	Ile	Arg	Leu	Gly	Glu	
			245						250					255		
Lys	Asp	Ala	His	Ser	Gln	Gly	Glu	Val	Val	Ser	Cys	Leu	Glu	Lys	Gly	
			260					265					270			
Leu	Val	Lys	Glu	Ala	Glu	Glu	Arg	Glu	Pro	Lys	Ile	Gln	Val	Ser	Glu	
	275						280					285				
Leu	Cys	Lys	Lys	Ala	Ile	Leu	Arg	Val	Ala	Glu	Leu	Ser	Ser	Asp	Asp	
290						295					300					
Phe	His	Leu	Asp	Arg	His	Leu	Tyr	Phe	Ala	Cys	Arg	Asp	Asp	Arg	Glu	
305				310					315						320	
Arg	Phe	Cys	Glu	Asn	Thr	Gln	Ala	Cys	Glu	Gly	Arg	Val	Tyr	Lys	Cys	
			325						330					335		
Leu	Phe	Asn	His	Lys	Phe	Glu	Glu	Ser	Met	Ser	Glu	Lys	Cys	Arg	Glu	
		340					345						350			
Ala	Leu	Thr	Thr	Arg	Gln	Lys	Leu	Ile	Ala	Gln	Asp	Tyr	Lys	Val	Ser	
	355						360					365				
Tyr	Ser	Leu	Ala	Lys	Ser	Cys	Lys	Ser	Asp	Leu	Lys	Lys	Tyr	Arg	Cys	
370						375					380					
Asn	Val	Glu	Asn	Leu	Pro	Arg	Ser	Arg	Glu	Ala	Arg	Leu	Ser	Tyr	Leu	
385				390						395					400	
Leu	Met	Cys	Leu	Glu	Ser	Ala	Val	His	Arg	Gly	Arg	Gln	Val	Ser	Ser	
			405						410					415		
Glu	Cys	Gln	Gly	Glu	Met	Leu	Asp	Tyr	Arg	Arg	Met	Leu	Met	Glu	Asp	
		420						425					430			
Phe	Ser	Leu	Ser	Pro	Glu	Ile	Ile	Leu	Ser	Cys	Arg	Gly	Glu	Ile	Glu	
	435						440					445				
His	His	Cys	Ser	Gly	Leu	His	Arg	Lys	Gly	Arg	Thr	Leu	His	Cys	Leu	
	450					455					460					
Met	Lys	Val	Val	Arg	Gly	Glu	Lys	Cys	Asn	Leu	Gly	Met	Asn	Cys	Gln	
465					470					475					480	
Gln	Ala	Leu	Gln	Thr	Leu	Ile	Gln	Glu	Thr	Asp	Pro	Gly	Ala	Asp	Tyr	
			485					490						495		
Arg	Ile	Asp	Arg	Ala	Leu	Asn	Glu	Ala	Cys	Glu	Ser	Val	Ile	Gln	Thr	
			500					505					510			
Ala	Cys	Lys	His	Ile	Arg	Ser	Gly	Asp	Pro	Met	Ile	Ser	Ser	Cys	Leu	
	515						520					525				
Met	Glu	His	Leu	Tyr	Thr	Glu	Lys	Met	Val	Glu	Asp	Cys	Glu	His	Arg	
	530					535					540					
Leu	Leu	Glu	Leu	Gln	Tyr	Phe	Ile	Ser	Arg	Asp	Trp	Lys	Leu	Asp	Pro	
545				550						555					560	
Val	Leu	Tyr	Arg	Lys	Cys	Gln	Gly	Asp	Ala	Ser	Arg	Leu	Cys	His	Thr	
			565						570					575		

His	Gly	Trp	Asn	Glu	Thr	Ser	Glu	Phe	Met	Pro	Gln	Gly	Ala	Val	Phe		
			580					585					590				
Ser	Cys	Leu	Tyr	Arg	Glu	Ala	Tyr	Arg	Thr	Glu	Glu	Gln	Gly	Arg	Arg		
		595					600					605					
Leu	Ser	Arg	Glu	Cys	Arg	Ala	Glu	Val	Gln	Arg	Ile	Leu	His	Gln	Arg		
	610					615					620						
Ala	Met	Asp	Val	Lys	Leu	Asp	Pro	Ala	Leu	Gln	Asp	Lys	Cys	Leu	Ile		
625					630					635					640		
Asp	Leu	Gly	Lys	Trp	Cys	Ser	Glu	Lys	Thr	Glu	Thr	Gly	Gln	Glu	Leu		
			645					650						655			
Glu	Cys	Leu	Gln	Asp	His	Leu	Asp	Asp	Leu	Val	Val	Glu	Cys	Arg	Asp		
			660				665						670				
Ile	Val	Gly	Asn	Leu	Thr	Glu	Leu	Glu	Ser	Glu	Asp	Ile	Gln	Ile	Glu		
	675					680					685						
Ala	Leu	Leu	Met	Arg	Ala	Cys	Glu	Pro	Ile	Ile	Gln	Thr	Phe	Cys	His		
	690					695					700						
Asp	Ala	Asp	Asn	Gln	Ile	Asp	Ser	Gly	Asp	Leu	Met	Glu	Cys	Leu	Ile		
705				710				715							720		
Gln	Asn	Lys	His	Gln	Lys	Asp	Met	Asn	Glu	Lys	Cys	Ala	Ile	Gly	Val		
			725					730						735			
Thr	His	Phe	Gln	Leu	Val	Gln	Met	Lys	Asp	Phe	Arg	Phe	Ser	Tyr	Lys		
		740				745						750					
Phe	Lys	Met	Ala	Cys	Lys	Glu	Asp	Val	Leu	Lys	Leu	Cys	Pro	Asn	Ile		
	755					760					765						
Lys	Lys	Lys	Val	Asp	Val	Val	Ile	Cys	Leu	Ser	Thr	Thr	Val	Arg	Asn		
	770					775					780						
Asp	Thr	Leu	Gln	Glu	Ala	Lys	Glu	His	Arg	Val	Ser	Leu	Lys	Cys	Arg		
785				790				795							800		
Arg	Gln	Leu	Arg	Val	Glu	Glu	Leu	Glu	Met	Thr	Glu	Asp	Ile	Arg	Leu		
			805					810						815			
Glu	Pro	Asp	Leu	Tyr	Glu	Ala	Cys	Lys	Ser	Asp	Ile	Lys	Asn	Phe	Cys		
		820					825						830				
Ser	Ala	Val	Gln	Tyr	Gly	Asn	Ala	Gln	Ile	Ile	Glu	Cys	Leu	Lys	Glu		
	835					840						845					
Asn	Lys	Lys	Gln	Leu	Ser	Thr	Arg	Cys	His	Gln	Lys	Val	Phe	Lys	Leu		
	850					855					860						
Gln	Glu	Thr	Glu	Met	Met	Asp	Pro	Glu	Leu	Asp	Tyr	Thr	Leu	Met	Arg		
865				870				875							880		
Val	Cys	Lys	Gln	Met	Ile	Lys	Arg	Phe	Cys	Pro	Glu	Ala	Asp	Ser	Lys		
			885					890						895			
Thr	Met	Leu	Gln	Cys	Leu	Lys	Gln	Asn	Lys	Asn	Ser	Glu	Leu	Met	Asp		
		900					905						910				
Pro	Lys	Cys	Lys	Gln	Met	Ile	Thr	Lys	Arg	Gln	Ile	Thr	Gln	Asn	Thr		
	915					920						925					
Asp	Tyr	Arg	Leu	Asn	Pro	Met	Leu	Arg	Lys	Ala	Cys	Lys	Ala	Asp	Ile		
	930					935					940						
Pro	Lys	Phe	Cys	His	Gly	Ile	Leu	Thr	Lys	Ala	Lys	Asp	Asp	Ser	Glu		
945				950				955							960		
Leu	Glu	Gly	Gln	Val	Ile	Ser	Cys	Leu	Lys	Leu	Arg	Tyr	Ala	Asp	Gln		
			965					970						975			
Arg	Leu	Ser	Ser	Asp	Cys	Glu	Asp	Gln	Ile	Arg	Ile	Ile	Ile	Gln	Glu		
		980					985						990				
Ser	Ala	Leu	Asp	Tyr	Arg	Leu	Asp	Pro	Gln	Leu	Gln	Leu	His	Cys	Ser		
	995					1000						1005					
Asp	Glu	Ile	Ser	Ser	Leu	Cys	Ala	Glu	Glu	Ala	Ala	Ala	Gln	Glu	Gln		
	1010					1015					1020						
Thr	Gly	Gln	Val	Glu	Glu	Cys	Leu	Lys	Val	Asn	Leu	Leu	Lys	Ile	Lys		

1025		1030		1035		1040									
Thr	Glu	Leu	Cys	Lys	Lys	Glu	Val	Leu	Asn	Met	Leu	Lys	Glu	Ser	Lys
		1045		1050		1055									
Ala	Asp	Ile	Phe	Val	Asp	Pro	Val	Leu	His	Thr	Ala	Cys	Ala	Leu	Asp
		1060		1065		1070									
Ile	Lys	His	His	Cys	Ala	Ala	Leu	Thr	Pro	Gly	Arg	Gly	Arg	Gln	Met
		1075		1080		1085									
Ser	Cys	Leu	Met	Glu	Ala	Leu	Glu	Asp	Lys	Arg	Val	Arg	Leu	Gln	Pro
		1090		1095		1100									
Glu	Cys	Lys	Lys	Arg	Leu	Asn	Asp	Arg	Ile	Glu	Met	Trp	Ser	Tyr	Ala
1105				1110		1115									1120
Ala	Lys	Val	Ala	Pro	Ala	Asp	Gly	Phe	Ser	Asp	Leu	Ala	Met	Gln	Val
				1125		1130									1135
Met	Thr	Ser	Pro	Ser	Lys	Asn	Tyr	Ile	Leu	Ser	Val	Ile	Ser	Gly	Ser
				1140		1145									1150
Ile	Cys	Ile	Leu	Phe	Leu	Ile	Gly	Leu	Met	Cys	Gly	Arg	Ile	Thr	Lys
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		1170				1175									

<210> 8  
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 <212> PRT  
 <213> Homo sapiens

<400> 8															
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Leu	His	Leu	Leu	Leu	Leu	Phe	Ala	Ala	Gly	Ala	Glu	Lys	Leu	Pro	Gly
			20					25					30		
His	Gly	Val	His	Ser	Gln	Gly	Gln	Gly	Pro	Gly	Ala	Asn	Phe	Val	Ser
		35				40						45			
Phe	Val	Gly	Gln	Ala	Gly	Gly	Gly	Gly	Pro	Ala	Gly	Gln	Gln	Leu	Pro
	50					55					60				
Gln	Leu	Leu	Gln	Ser	Ser	Gln	Leu	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln
65					70				75						80
Gln	Gln	Gln	Gln	Leu	Gln	Pro	Pro	Gln	Pro	Pro	Phe	Pro	Ala	Gly	Gly
			85					90						95	
Pro	Pro	Ala	Arg	Arg	Gly	Gly	Ala	Gly	Ala	Gly	Gly	Gly	Trp	Lys	Leu
		100						105					110		
Ala	Glu	Glu	Glu	Ser	Cys	Arg	Glu	Asp	Val	Thr	Arg	Val	Cys	Pro	Lys
		115					120					125			
His	Thr	Trp	Ser	Asn	Asn	Leu	Ala	Val	Leu	Glu	Cys	Leu	Gln	Asp	Val
	130					135					140				
Arg	Glu	Pro	Glu	Asn	Glu	Ile	Ser	Ser	Asp	Cys	Asn	His	Leu	Leu	Trp
145				150					155						160
Asn	Tyr	Lys	Leu	Asn	Leu	Thr	Thr	Asp	Pro	Lys	Phe	Glu	Ser	Val	Ala
			165					170							175
Arg	Glu	Val	Cys	Lys	Ser	Thr	Ile	Thr	Glu	Ile	Lys	Glu	Cys	Ala	Asp
		180						185					190		
Glu	Pro	Val	Gly	Lys	Gly	Tyr	Met	Val	Ser	Cys	Leu	Val	Asp	His	Arg
		195					200					205			
Gly	Asn	Ile	Thr	Glu	Tyr	Gln	Cys	His	Gln	Tyr	Ile	Thr	Lys	Met	Thr
	210					215					220				
Ala	Ile	Ile	Phe	Ser	Asp	Tyr	Arg	Leu	Ile	Cys	Gly	Phe	Met	Asp	Asp
225					230					235					240

Cys	Lys	Asn	Asp	Ile	Asn	Ile	Leu	Lys	Cys	Gly	Ser	Ile	Arg	Leu	Gly	
				245					250					255		
Glu	Lys	Asp	Ala	His	Ser	Gln	Gly	Glu	Val	Val	Ser	Cys	Leu	Glu	Lys	
			260					265					270			
Gly	Leu	Val	Lys	Glu	Ala	Glu	Glu	Arg	Glu	Pro	Lys	Ile	Gln	Val	Ser	
		275					280					285				
Glu	Leu	Cys	Lys	Lys	Ala	Ile	Leu	Arg	Val	Ala	Glu	Leu	Ser	Ser	Asp	
	290					295				300						
Asp	Phe	His	Leu	Asp	Arg	His	Leu	Tyr	Phe	Ala	Cys	Arg	Asp	Asp	Arg	
305					310					315					320	
Glu	Arg	Phe	Cys	Glu	Asn	Thr	Gln	Ala	Arg	Glu	Gly	Arg	Val	Tyr	Lys	
			325					330						335		
Cys	Leu	Phe	Asn	His	Lys	Phe	Glu	Glu	Ser	Met	Ser	Glu	Lys	Cys	Arg	
			340					345					350			
Glu	Ala	Leu	Thr	Thr	Arg	Gln	Lys	Leu	Ile	Ala	Gln	Asp	Tyr	Lys	Val	
		355					360					365				
Ser	Tyr	Ser	Leu	Ala	Lys	Ser	Cys	Lys	Ser	Asp	Leu	Lys	Lys	Tyr	Arg	
	370					375					380					
Cys	Asn	Val	Glu	Asn	Leu	Pro	Arg	Ser	Arg	Glu	Ala	Arg	Leu	Ser	Tyr	
385					390					395					400	
Leu	Leu	Met	Cys	Leu	Glu	Ser	Ala	Val	His	Arg	Gly	Arg	Gln	Val	Ser	
			405					410						415		
Ser	Glu	Cys	Gln	Gly	Glu	Met	Leu	Asp	Tyr	Arg	Arg	Met	Leu	Met	Glu	
			420					425					430			
Asp	Phe	Ser	Leu	Ser	Pro	Glu	Ile	Ile	Leu	Ser	Cys	Arg	Gly	Glu	Ile	
		435				440						445				
Glu	His	His	Cys	Ser	Gly	Leu	His	Arg	Lys	Gly	Arg	Thr	Leu	His	Cys	
	450					455					460					
Leu	Met	Lys	Val	Val	Arg	Gly	Glu	Lys	Gly	Asn	Leu	Gly	Met	Asn	Cys	
465					470					475					480	
Gln	Gln	Ala	Leu	Gln	Thr	Leu	Ile	Gln	Glu	Thr	Asp	Pro	Gly	Ala	Asp	
			485						490					495		
Tyr	Arg	Ile	Asp	Arg	Ala	Leu	Asn	Glu	Ala	Cys	Glu	Ser	Val	Ile	Gln	
			500					505					510			
Thr	Ala	Cys	Lys	His	Ile	Arg	Ser	Gly	Asp	Pro	Met	Ile	Leu	Ser	Cys	
		515					520					525				
Leu	Met	Glu	His	Leu	Tyr	Thr	Glu	Lys	Met	Val	Glu	Asp	Cys	Glu	His	
	530					535					540					
Arg	Leu	Leu	Glu	Leu	Gln	Tyr	Phe	Ile	Ser	Arg	Asp	Trp	Lys	Leu	Asp	
545					550					555					560	
Pro	Val	Leu	Tyr	Arg	Lys	Cys	Gln	Gly	Asp	Ala	Ser	Arg	Leu	Cys	His	
				565					570					575		
Thr	His	Gly	Trp	Asn	Glu	Thr	Ser	Glu	Phe	Met	Pro	Gln	Gly	Ala	Val	
			580					585					590			
Phe	Ser	Cys	Leu	Tyr	Arg	His	Ala	Tyr	Arg	Thr	Glu	Glu	Gln	Gly	Arg	
		595					600					605				
Arg	Leu	Leu	Asp	Pro	Ala	Leu	Gln	Asp	Lys	Cys	Leu	Ile	Asp	Leu	Gly	
	610					615					620					
Lys	Trp	Cys	Ser	Glu	Lys	Thr	Glu	Thr	Gly	Gln	Glu	Leu	Glu	Cys	Leu	
625					630					635					640	
Ser	Arg	Glu	Cys	Arg	Ala	Glu	Val	Gln	Arg	Ile	Leu	His	Gln	Arg	Ala	
				645					650					655		
Met	Asp	Val	Lys	Gln	Asp	His	Leu	Asp	Asp	Leu	Val	Val	Glu	Cys	Arg	
			660					665					670			
Asp	Ile	Val	Gly	Asn	Leu	Thr	Glu	Leu	Glu	Ser	Glu	Asp	Ile	Gln	Ile	
	675						680					685				
Glu	Ala	Leu	Leu	Met	Arg	Ala	Cys	Glu	Pro	Ile	Ile	Gln	Asn	Phe	Cys	



690	695	700
His Asp Val Ala Asp Asn Gln Ile Asp Ser Gly Asp Leu Met Glu Cys		
705	710	715
Leu Ile Gln Asn Lys His Gln Lys Asp Met Asn Glu Lys Cys Ala Ile		720
	725	730
Gly Val Thr His Phe Gln Leu Val Gln Met Lys Asp Phe Arg Phe Ser		735
	740	745
Tyr Lys Phe Lys Met Ala Cys Lys Glu Asp Val Leu Lys Leu Cys Pro		750
	755	760
Asn Ile Lys Lys Lys Val Asp Val Val Ile Cys Leu Ser Thr Thr Val		765
	770	775
Arg Asn Asp Thr Leu Gln Glu Ala Lys Glu His Arg Val Ser Leu Lys		780
785	790	795
Cys Arg Arg Gln Leu Arg Val Glu Glu Leu Glu Met Thr Glu Asp Ile		800
	805	810
Arg Leu Glu Pro Asp Leu Tyr Glu Ala Cys Lys Ser Asp Ile Lys Asn		815
	820	825
Phe Cys Ser Ala Val Gln Tyr Gly Asn Ala Gln Ile Ile Glu Cys Leu		830
	835	840
Lys Glu Asn Lys Lys Gln Leu Ser Thr Arg Cys His Gln Lys Val Phe		845
	850	855
Lys Leu Gln Glu Thr Glu Met Met Asp Pro Glu Leu Asp Tyr Thr Leu		860
865	870	875
Met Arg Val Cys Lys Gln Met Ile Lys Arg Phe Cys Pro Glu Ala Asp		880
	885	890
Ser Lys Thr Met Leu Gln Cys Leu Lys Gln Asn Lys Asn Ser Glu Leu		895
	900	905
Met Asp Pro Lys Cys Lys Gln Met Ile Thr Lys Arg Gln Ile Thr Gln		910
	915	920
Asn Thr Asp Tyr Arg Leu Asn Pro Met Leu Arg Lys Ala Cys Lys Ala		925
	930	935
Asp Ile Pro Lys Phe Cys His Gly Ile Leu Thr Lys Ala Lys Asp Asp		940
945	950	955
Ser Glu Leu Glu Gly Gln Val Ile Ser Cys Leu Lys Leu Arg Tyr Ala		960
	965	970
Asp Gln Arg Leu Ser Ser Asp Cys Glu Asp Gln Ile Arg Ile Ile Ile		975
	980	985
Gln Glu Ser Ala Leu Asp Tyr Arg Leu Asp Pro Gln Leu Gln Leu His		990
	995	1000
Cys Ser Asp Glu Ile Ser Ser Leu Cys Ala Glu Glu Ala Ala Ala Gln		1005
	1010	1015
Glu Gln Thr Gly Gln Val Glu Glu Cys Leu Lys Val Asn Leu Leu Lys		1020
1025	1030	1035
Ile Lys Thr Glu Leu Cys Lys Lys Glu Val Leu Asn Met Leu Lys Glu		1040
	1045	1050
Ser Lys Ala Asp Ile Phe Val Asp Pro Val Leu His Thr Ala Cys Ala		1055
	1060	1065
Leu Asp Ile Lys His His Cys Ala Ala Ile Thr Pro Gly Arg Gly Arg		1070
	1075	1080
Gln Met Ser Cys Leu Met Glu Ala Leu Glu Asp Lys Arg Val Arg Leu		1085
	1090	1095
Gln Pro Glu Cys Lys Lys Arg Leu Asn Asp Arg Ile Glu Met Trp Ser		1100
1105	1110	1115
Tyr Ala Ala Lys Val Ala Pro Ala Asp Gly Phe Ser Asp Leu Ala Met		1120
	1125	1130
Gln Val Met Thr Ser Pro Ser Lys Asn Tyr Ile Leu Ser Val Ile Ser		1135
	1140	1145
		1150



Gly	Ser	Ile	Cys	Ile	Leu	Phe	Leu	Ile	Gly	Leu	Met	Cys	Gly	Arg	Ile
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Thr	Lys	Arg	Val	Thr	Arg	Glu	Leu	Lys	Asp	Arg					
	1170					1175									

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<220>  
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gtaatacgac tcactatagg gc	22
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 tat ggc atg cac tgg gtc cgc cag gct cca ggc aag ggg ctg gag tgg 96  
 Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp  
 20 25 30  
 gtg gca gtt ata tca tat gat gga agt aat aaa tac tat gca gac tcc 144  
 Val Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser  
 35 40 45  
 gtg aag ggc cga ttc acc atc tcc aga gac aat tcc aag aac acg ctg 192  
 Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu  
 50 55 60  
 tat ctg caa atg aac agc ctg aga gct gag gac acg gct gtg tat tac 240  
 Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr  
 65 70 75 80  
 tgt gcg agg tcg act acg agg tct tat cct cta tac ggt atg gac gtt 288  
 Cys Ala Arg Ser Thr Thr Arg Ser Tyr Pro Leu Tyr Gly Met Asp Val  
 85 90 95

tgg ggc caa ggg aac cct gtc acc	312
Trp Gly Gln Gly Asn Pro Val Thr	
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gga cag acg gcc agt att acc tgt ggg gga aat aac att gga agt aaa	96
Gly Gln Thr Ala Ser Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys	
20 25 30	
agt gtg cac tgg tac cat cag aag cca ggc cag gcc cct gtg ctg gtc	144
Ser Val His Trp Tyr His Gln Lys Pro Gly Gln Ala Pro Val Leu Val	
35 40 45	
gtc tat gat gat agc gac cgg ccc tca ggg atc cct gag cga ttc tct	192
Val Tyr Asp Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser	
50 55 60	
ggc tcc aac tct ggg aac acg gcc acc ctg acc atc acc agg gtc gaa	240
Gly Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Thr Arg Val Glu	
65 70 75 80	
gcc ggg gat gag gcc gac tat tac tgt cag gtg tgg gat agt agt agt	288
Ala Gly Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser	
85 90 95	
gat ctc aat tgg gtg ttc ggc gga agg acc caa gct gac cgt cct acg	336
Asp Leu Asn Trp Val Phe Gly Gly Arg Thr Gln Ala Asp Arg Pro Thr	
100 105 110	
tca gcc caa ggc tgc ccc tcc ggt cac tct gtt ccc cgc ccc cct ctg	384
Ser Ala Gln Gly Cys Pro Ser Gly His Ser Val Pro Arg Pro Pro Leu	
115 120 125	
aag agc ttc aag ctt	399
Lys Ser Phe Lys Leu	
130	

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 <213> Homo sapiens

<400> 28

Arg	Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Ser
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Tyr	Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp
			20					25					30		
Val	Ala	Val	Ile	Ser	Tyr	Asp	Gly	Ser	Asn	Lys	Tyr	Tyr	Ala	Asp	Ser
		35					40					45			
Val	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Lys	Asn	Thr	Leu
	50					55					60				
Tyr	Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr
65					70					75					80
Cys	Ala	Arg	Ser	Thr	Thr	Arg	Ser	Tyr	Pro	Leu	Tyr	Gly	Met	Asp	Val
				85					90					95	
Trp	Gly	Gln	Gly	Asn	Pro	Val	Thr								
			100												

<210> 29

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<212> PRT

<213> Homo sapiens

<400> 29

Val	Thr	Ser	Tyr	Val	Leu	Thr	Gln	Pro	Pro	Ser	Val	Ser	Val	Ala	Pro
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Gly	Gln	Thr	Ala	Ser	Ile	Thr	Cys	Gly	Gly	Asn	Asn	Ile	Gly	Ser	Lys
			20					25					30		
Ser	Val	His	Trp	Tyr	His	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Val	Leu	Val
		35					40					45			
Val	Tyr	Asp	Asp	Ser	Asp	Arg	Pro	Ser	Gly	Ile	Pro	Glu	Arg	Phe	Ser
	50					55					60				
Gly	Ser	Asn	Ser	Gly	Asn	Thr	Ala	Thr	Leu	Thr	Ile	Thr	Arg	Val	Glu
65					70					75					80
Ala	Gly	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Gln	Val	Trp	Asp	Ser	Ser	Ser
				85					90					95	
Asp	Leu	Asn	Trp	Val	Phe	Gly	Gly	Arg	Thr	Gln	Ala	Asp	Arg	Pro	Thr
			100					105					110		
Ser	Ala	Gln	Gly	Cys	Pro	Ser	Gly	His	Ser	Val	Pro	Arg	Pro	Pro	Leu
		115					120					125			
Lys	Ser	Phe	Lys	Leu											
			130												

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caagagcaga caggtcaggt gg

22